

Abstract of the Disclosure

A nozzle and associated system for treating fluids is provided, particularly for a system including a reaction vessel containing a granular filter or ion exchange medium and a fluid manifold immersed in the granular or ion exchange medium. The nozzle has an outer screen defining an interior cavity, a duct for providing flow to the interior cavity, and a restrictor having at least one orifice through which the duct is in communication with the cavity. The orifice or orifices of the restrictor have a total open area that is less than the total open area of the outer screen. By this sizing relationship, the nozzle flow rate is dictated by the inner orifice area, not the outer screen open area. In comparison to the outer screen openings, each of the inner orifices is less susceptible to plugging or wearing than the narrow outer screen openings, which are adjacent to medium. The nozzle according to the invention therefore provides a consistent predetermined flow rate and pressure drop profile over extended periods. Advantageously, a manifold including a spaced array of the nozzles has consistent flow rates among all of the nozzles, facilitating a desired flow profile through the medium to the manifold. Also disclosed are nozzle embodiments having multiple fluid ducts, each having a dedicated flow restrictor orifice.